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EXAMINER	
FLEURANTIN, JEAN B	

ART UNIT	PAPER NUMBER
2162	

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/720,246	KELLER ET AL.	
	Examiner	Art Unit	
	JEAN B. FLEURANTIN	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This in response to the application filed on 11/25/03, in which claims 1-30 are presented for examination.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 11/25/03. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

3. The Examiner accepts the Drawings (11/25/03).

Abstract

4. The abstract of the disclosure is objected to because the Title of the invention should not be into the same page as the Abstract (Page 35). Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 15 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As per claim 15,

As set forth in MPEP 2106:

> Products may be either machines, manufactures, or compositions of matter.
> A *machine* is "a concrete thing, consisting of parts or of certain devices and combinations of devices." *Burr v. Duryee*, 68 U.S. (1 Wall.) 531, 570 (1863).

Claim 15, in view of the above cited MPEP section is not statutory, because "a method for determining an access plan for a database query compatible with data mining based database access control comprising selecting a regression function for use with said query, determining a number of qualifying records for said query via said regression function, and selecting an access method for accessing the database from a plurality of different access methods based upon the determined number of qualifying records" does not produce any useful and tangible result.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 6-18, 21-27 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,761,653 issued to Schiefer et al., ("Schiefer") in view of "Selectivity Estimation using Probabilistic Models" issued to Lise Getoor et al., submitted by the applicants, ("Getoor").

As per claim 1, Schiefer discloses "a method for estimating a selectivity of a query containing at least one column-associated condition related to column attributes of a relational database table" (i.e., estimation the cardinalities for a set of columns in a relational database, resulting from a query operation; see col. 5, lines 47-62 and col. 6, lines 14-17), the method comprising:

"(b) determining at least one regression function that reflects correlations between particular query conditions based on said dataset" (In light the specification at page 6, lines 10-14 and page 7, lines 1-11, the purposed of regression function is for estimating cardinalities. The method for estimating (determining) the cardinalities for a set of columns, which corresponds (correlates/correlation) to result producing by a grouping operation is disclosed by Schiefer col. 6, lines 14-17),

"(c) determining a table-specific estimate of a cardinality of a query based upon the regression function serving as a data mining model" (i.e., query processing, in which the resulting table comprising of distinct values for the (key cardinality) key can accurately estimated; col. 5, lines 47-62 and col. 9, lines 32-33). Schiefer fails to explicitly disclose generating a dataset by sampling a plurality of queries applied against the database, wherein the dataset includes a plurality of query conditions and information related to combinations of said query conditions.

However, Getoor discloses generating a dataset by sampling a plurality of queries applied against the database (see page 461, col. 2, last paragraph lines 8-12), wherein the dataset includes a plurality of query conditions and information related to combinations of said query conditions (see page 469, col. 2, section 5, lines 12-19).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Schiefer by generating a dataset by sampling a plurality of queries applied against the database, wherein the dataset includes a plurality of query conditions and information related to combinations of said query conditions as disclosed by Getoor (see Getoor see page 462, col. 1, two last paragraphs). Such a modification would allow the teachings of Schiefer to provide estimates for complex queries involving several select and join operations (see page 471, col. 2, section conclusions, lines 14-15), thereby improving the accuracy of the self tuning database retrieval optimization using regression functions.

As per claim 2, in addition to claim 1, Schiefer fails to explicitly disclose selecting an access method for an incoming query from a plurality of database access methods based upon the table-specific estimate for said incoming query. However, Getoor discloses selecting an access method for an incoming query from a plurality of database access methods based upon the table-specific estimate for said incoming query (see Getoor page 469, col. 2, section 5, from select queries up to average over several thousand queries).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Schiefer by selecting an access method for an incoming query from a

plurality of database access methods based upon the table-specific estimate for said incoming query as disclosed by Getoor (see Getoor page 469, col. 2, section 5, paragraph 4). Such a modification would allow the teachings of Schiefer to provide estimates for complex queries involving several select and join operations (see page 471, col. 2, section conclusions, lines 14-15), thereby improving the accuracy of the self tuning database retrieval optimization using regression functions.

As per claim 3, in addition to claim 1, Schiefer further discloses "determining a table-combining cardinality estimate based upon said table-specific estimate" (i.e., determining an effective column cardinality for each remaining column; see col. 4, lines 10-24).

As per claim 6, in addition to claim 1, Schiefer further discloses "training the model by using queries that include logical AND operators to determine a correlation between corresponding column predicates" (i.e., product of the individual column cardinalities; see col. 13, line 43 to col. 14, line 24).

As per claim 7, in addition to claim 1, Schiefer further discloses "transforming a query containing OR predicates to an equivalent query containing AND predicates to simplify training of a model" (i.e., grouping, comparing (transforming), product of the individual column cardinalities; see col. 13, line 43 to col. 14, line 24).

As per claim 8, in addition to claim 1, Schiefer further discloses "normalizing the determined cardinality based upon a total number of rows in the database table" (i.e., method for estimating the cardinalities formed from a grouping of columns in a relational database; see col. 3, lines 61-64).

As per claim 9, in addition to claim 1, Schiefer further discloses "normalizing the cardinality associated with a sampled query with a size of the database table when the query is sampled" (i.e., method for estimating the cardinalities formed from a grouping of columns in a relational database; see col. 3, lines 61-64), and

"(c.2) denormalizing a cardinality associated with a query for which a cardinality is to be predicted with the size of the database table when the selectivity for that query is predicted" (see col. 3, lines 61-64).

As per claim 10, in addition to claim 1, Schiefer further discloses "using a subset of frequently used queries to determine said regression function" (see col. 4, lines 53-54).

As per claim 11, the limitations of claim 11 are rejected in the analysis of claim 1, and this claim is rejected on that basis.

As per claim 12, in addition to claim 1, Schiefer further discloses "sampling said queries via a tool based on a database optimizer" (i.e., query optimizer; see col. 3, lines 61-64).

As per claim 13, in addition to claim 1, Schiefer further discloses "mapping queries" (i.e., query plan comprises a translation (mapping) of the user's SQL commands in terms of the RDBMS operators; see col. 1, lines 51-56) "that include a plurality of logical AND operators to corresponding cardinality based regression formulae" (i.e., product of the individual column cardinalities; see col. 13, line 43 to col. 14, line 24 and col. 2, lines 1-4).

As per claim 14, in addition to claim 1, Schiefer further discloses "at least one of an inner join and an outer join to corresponding regression formulae based on at least one of cardinality and selectively operations" (i.e., product of the individual column cardinalities; see col. 13, line 43 to col. 14, line 24 and col. 2, lines 1-4).

As per claim 15, Schiefer discloses "a method for determining an access plan for a database query compatible with data mining based database access control" (i.e., process for estimating key (index key) cardinalities, in which the indexing facility access to a table; see col. 11, lines 52-58) comprising:

"(a) selecting a regression function for use with said query" (i.e., estimation the cardinalities (regression function) for a set of columns, which corresponds to result producing by operation in a query; see col. 6, lines 14-17),

"(b) determining a number of qualifying records for said query via said regression function" (In light the specification at page 5, lines 16-17. The purposed of generating an accurate estimate of the key cardinality is disclosed by Schiefer col. 9, lines 32-33). Schiefer fails to explicitly disclose selecting an access method for accessing the database from a plurality of different access methods based upon the determined number of qualifying records.

However, Getoor discloses selecting an access method for accessing the database from a plurality of different access methods based upon the determined number of qualifying records (see Getoor page 469, col. 2, Section 5, lines 10-43).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Schiefer by selecting an access method for accessing the database from a plurality of different access methods based upon the determined number of qualifying records as disclosed by Getoor (see Getoor page 469, col. 2, Section 5, paragraph 4). Such a modification would allow the teachings of Schiefer to provide estimates for complex queries involving several select and join operations (see page 471, col. 2, section conclusions, lines 14-15), thereby improving the accuracy of the self tuning database retrieval optimization using regression functions.

As per claim 16, Schiefer discloses "a computer system for estimating a selectivity of a query containing at least one column-associated condition related to column attributes of a relational database table" (i.e., estimation the cardinalities for a set of columns in a relational database, resulting from a query operation; see col. 5, lines 47-62 and col. 6, lines 14-17), the system comprising:

"(b) a regression module for determining at least one regression function that reflects correlations between particular query conditions based on said dataset" (In light the specification at page 6, lines 10-14 and page 7, lines 1-11, the purposed of regression function is for estimating cardinalities. The method for estimating (determining) the cardinalities for a set of columns, which corresponds

(correlates/correlation) to result producing by a grouping operation is disclosed by Schiefer col. 6, lines 14-17),

"(c) a processing module determining a table-specific estimate of a cardinality of a query based upon the regression function serving as a data mining model" (i.e., generating an accurate estimate of the key cardinality; see col. 9, lines 32-33). Schiefer fails to explicitly disclose a sampling module for generating a dataset by sampling a plurality of queries applied against the database, wherein the dataset includes a plurality of query conditions and information related to combinations of said query conditions.

However, Getoor discloses a sampling module for generating a dataset by sampling a plurality of queries applied against the database (see page 461, col. 2, last paragraph lines 8-12), wherein the dataset includes a plurality of query conditions and information related to combinations of said query conditions (see page 469, col. 2, section 5, lines 12-19).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Schiefer by a sampling module for generating a dataset by sampling a plurality of queries applied against the database, wherein the dataset includes a plurality of query conditions and information related to combinations of said query conditions as disclosed by Getoor (see Getoor see page 462, col. 1, two last paragraphs). Such a modification would allow the teachings of Schiefer to provide estimates for complex queries involving several select and join operations (see page 471, col. 2, section conclusions, lines 14-15), thereby improving the accuracy of the self tuning database retrieval optimization using regression functions.

As per claim 17, in addition to claim 1, Schiefer fails to explicitly disclose the processing module selectes an access method for an incoming query from a plurality of database access methods based upon the table-specific estimate for said incoming query. However, Getoor discloses selecting an access method for an incoming query from a plurality of database access methods based upon the table-specific estimate for said incoming query (see Getoor page 469, col. 2, section 5, from select queries up to average over several thousand queries).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Schiefer by processing module selectes an access method for an incoming query from a plurality of database access methods based upon the table-specific estimate for said incoming query as disclosed by Getoor (see Getoor page 469, col. 2, section 5, paragraph 4). Such a modification would allow the teachings of Schiefer to provide estimates for complex queries involving several select and join operations (see page 471, col. 2, section conclusions, lines 14-15), thereby improving the accuracy of the self tuning database retrieval optimization using regression functions.

As per claim 18, in addition to claim 1, Schiefer further discloses "said query includes column associated conditions related to a plurality of tables" (i.e., plurality tables; see Fig. 2), and "wherein the processing module determines a table-combining cardinality estimate based upon said table-specific estimate" (i.e., estimating cardinalities of column grouping operation in a query, in which generates an accurate estimates cardinalities; see col. 6, lines 15-30).

As per claim 21, in addition to claim 1, Schiefer further discloses "training the model by using queries that include logical AND operators to determine a correlation between corresponding column predicates" (i.e., product of the individual column cardinalities; see col. 13, line 43 to col. 14, line 24).

As per claim 22, in addition to claim 1, Schiefer further discloses "transforming a query containing OR predicates to an equivalent query containing AND predicates to simplify training of a model" (i.e., grouping, comparing (transforming), product of the individual column cardinalities; see col. 13, line 43 to col. 14, line 24).

As per claim 23, in addition to claim 1, Schiefer further discloses "the processing module normalizes the determined cardinality based upon a current total number of rows in the database table" (i.e., method for estimating the cardinalities formed from a grouping of columns in a relational database; see col. 3, lines 61-64).

As per claim 24, in addition to claim 1, Schiefer further discloses "the processing module normalizes the cardinality associated with a sampled query with a size of the database table when the query is sampled" (i.e., method for estimating the cardinalities formed from a grouping of columns in a relational database; see col. 3, lines 61-64), and

"(c.2) denormalizing a cardinality associated with a query for which a cardinality is to be predicted with the size of the database table when the selectivity for that query is predicted" (see col. 3, lines 61-64).

As per claim 25, Schiefer discloses "a program product apparatus having a computer readable medium with" (see col. 5, lines 22-27) "computer program logic recorded thereron for estimating a selectivity of a query containing at least one column-associated condition related to column attributes of a relational database table" (i.e., estimation the cardinalities for a set of columns in a relational database, resulting from a query operation; see col. 5, lines 47-62 and col. 6, lines 14-17), said program product apparatus comprising:

"(b) a regression module for determining at least one regression function that reflects correlations between particular query conditions based on said dataset" (i.e., estimation (determining) the cardinalities for a set of columns, which corresponds (correlates/correlation) to result producing by a grouping operation (regression function); see col. 6, lines 14-17),

"(c) a processing module determining a table-specific estimate of a cardinality of a query based upon the regression function serving as a data mining model" (i.e., generating an accurate estimate of the key cardinality; see col. 9, lines 32-33). Schiefer fails to explicitly disclose a sampling module for generating a dataset by sampling a plurality of queries applied against the database, wherein the dataset includes a plurality of query conditions and information related to combinations of said query conditions.

However, Getoor discloses a sampling module for generating a dataset by sampling a plurality of queries applied against the database (see page 461, col. 2, last paragraph lines 8-12), wherein the

dataset includes a plurality of query conditions and information related to combinations of said query conditions (see page 469, col. 2, section 5, lines 12-19).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Schiefer by a sampling module for generating a dataset by sampling a plurality of queries applied against the database, wherein the dataset includes a plurality of query conditions and information related to combinations of said query conditions as disclosed by Getoor (see Getoor see page 462, col. 1, two last paragraphs). Such a modification would allow the teachings of Schiefer to provide estimates for complex queries involving several select and join operations (see page 471, col. 2, section conclusions, lines 14-15), thereby improving the accuracy of the self tuning database retrieval optimization using regression functions.

As per claim 26, in addition to claim 1, Schiefer fails to explicitly disclose the processing module selectes an access method for an incoming query from a plurality of database access methods based upon the table-specific estimate for said incoming query. However, Getoor discloses selecting an access method for an incoming query from a plurality of database access methods based upon the table-specific estimate for said incoming query (see Getoor page 469, col. 2, section 5, from select queries up to average over several thousand queries).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Schiefer by processing module selectes an access method for an incoming query from a plurality of database access methods based upon the table-specific estimate for said incoming query as disclosed by Getoor (see Getoor page 469, col. 2, section 5, paragraph 4). Such a modification would allow the teachings of Schiefer to provide estimates for complex queries involving several select and join operations (see page 471, col. 2, section conclusions, lines 14-15), thereby improving the accuracy of the self tuning database retrieval optimization using regression functions.

As per claim 27, in addition to claim 1, Schiefer further discloses "said query includes column associated conditions related to a plurality of tables" (i.e., plurality tables; see Fig. 2), and "wherein the

processing module determines a table-combining cardinality estimate based upon said table-specific estimate" (i.e., estimating cardinalities of column grouping operation in a query, in which generates an accurate estimates cardinalities; see col. 6, lines 15-30).

As per claim 30, in addition to claim 25, Schiefer further discloses "the processing module trains the model by using queries that include logical AND operators to determine a correlation between corresponding column predicates" (i.e., product of the individual column cardinalities; see col. 13, line 43 to col. 14, line 24).

7. Claims 4, 5, 19, 20, 28 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With regard to claim 4, the prior art of record fails to teach or suggest "wherein step (a) further includes:

(a.1) generating a dataset including queries q_j, j=1, . . . N, wherein each query includes a plurality of column-associated conditions c_{jk}, k=1, . . . M_j, N, M being integer variables, wherein step (a.1) further includes:

(a.1.1) storing a cardinality C of an elementary operation associated with a column-associated condition c_{jk},

(a.1.2) storing a count of query-qualifying database records reflecting the correlation between the database table column attributes referred to in each elementary operation,

wherein step (c) further includes: (c.1) calculating a cardinality estimate CE of said query with the following formula:

$CE = \sum_{i=1,...L} f(Z_i)$ wherein $f(Z_i)$ is a regression function, CE is a total of correlations between the plurality combinations of elementary operations used in said sampled queries, and Z_i is a frequency of occurrence for one or more column-associated conditions C_{jk}, and wherein step (b) further includes:

(b.1) generating said regression function using said data mining model" in conjunction with other elements of the independent claims would not found anticipated or obvious over the prior art made of record. The dependent claim 5 is also allowed.

With regard to claim 19, the prior art of record fails to teach or suggest "wherein the sampling module further comprises:

a dataset module for generating a dataset including queries q_j, j=1, . . . N, wherein each query includes a plurality of column-associated conditions c_{jk}, k=1, . . . M_j, N, M being integer variables, wherein said dataset module further comprises:

a first storage module for storing a cardinality C of an elementary operation associated with a column-associated condition c_{jk},

a second storage module for storing a count of query-qualifying database records reflecting the correlation between the database table column attributes referred to in each elementary operation,

wherein the processing module further comprises:

an estimation module for determining a cardinality estimate CE of said query with the following formula:

$CE = \sum_{i=1,...L} f(Z_i)$ wherein $f(Z_i)$ is a regression function, CE is a total of correlations between the plurality combinations of elementary operations used in said sampled queries, and Z_i is a frequency of occurrence for one or more column-associated conditions C_{jk}, and

wherein the regression module further comprises:

a function module for generating said regression function using said data mining model" in conjunction with other elements of the independent claims would not found anticipated or obvious over the prior art made of record. The dependent claim 20 is also allowed.

With regard to claim 28, the prior art of record fails to teach or suggest "wherein the sampling module further comprises:

a dataset module for generating a dataset including queries q_j, j=1, . . . N,

wherein each query includes a plurality of column-associated conditions c_{jk}, k=1, . . . M_j, N, M being integer variables, wherein said dataset module further comprises:

a first storage module for storing a cardinality C of an elementary operation associated with a column-associated condition c_{jk},

a second storage module for storing a count of query-qualifying database records reflecting the correlation between the database table column attributes referred to in each elementary operation,

wherein the processing module further comprises:

an estimation module for determining a cardinality estimate CE of said query with the following formula:

$CE = \sum_{i=1,...L} f(Z_i)$ wherein $f(Z_i)$ is a regression function, CE is a total of correlations between the plurality combinations of elementary operations used in said sampled queries, and Z_i is a frequency of occurrence for one or more column-associated conditions C_{jk}, and

wherein the regression module further comprises:

a function module for generating said regression function using said data mining model" in conjunction with other elements of the independent claims would not found anticipated or obvious over the prior art made of record. The dependent claim 29 is also allowed.

Prior Art

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Burger, U.S. Pub. No. 2004/0059743, relates to database application.

Freytag et al., U.S. Pat. No. 6,738,755, relates to the optimization of queries using incremental estimates of cardinality for derived relations when statistically correlated predicates are applied.

Chaudhuri et al., U.S. Pat. No. 6,738,755, relates to queries optimizing queries on databases.

CONTACT INFORMATION

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEAN B. FLEURANTIN whose telephone number is 571 – 272-4035. The examiner can normally be reached on 7:05 to 4:35.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E BREENE can be reached on 571 – 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jean Bolte Fleurantin

Patent Examiner

Technology Center 2100

May 04, 2006